06- DEPARTMENT OF ENVIRONMENTAL PROTECTION

096 BUREAU OF AIR QUALITY CONTROL

**CHAPTER 110: AMBIENT AIR QUALITY STANDARDS**

**SUMMARY:** This regulation establishes ambient air quality standards that are maximum levels of a particular pollutant that is permitted in the ambient air. This regulation also establishes ambient increments which define the maximum ambient increase of a particular pollutant that can be permitted for a given area depending on the classification of that area. Area classification is dealt with in another regulation. On November 23, l982, the Board adopted Section l2 establishing ambient air quality standards for hexavalent chromium and total chromium until acceptable analytical procedures are available for hexavalent chromium.

1. Scope

A. These standards are applicable in all ambient air quality control regions of the State of Maine.

B. All ambient air quality standards are expressed at 25 degrees centigrade and 760 millimeters of mercury pressure.

2. Particulate Matter Ambient Air Quality Standards

A. The level of the 24-hour particulate matter ambient air quality standard is 150 micrograms per cubic meter, as measured in the ambient air as $PM_{10}$, based on methods contained in Appendix J of 40 CFR Part 50.

The standards are attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $ug/m^3$, as determined in accordance with Appendix K of 40 CFR Part 50, is equal to or less than one.

B. The level of the annual standard for particulate matter is 40 micrograms per cubic meter, as measured in the ambient air as $PM_{10}$, based on methods contained in Appendix J of 40 CFR Part 50.

The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with Appendix K of 40 CFR Part 50, is less than or equal to 40

$ug/m^3$.

3. Sulfur Dioxide Ambient Air Quality Standards

A. Sulfur dioxide concentration for any 3-hour period at any location shall not exceed 1150 micrograms per cubic meter, except once per year.

B. Sulfur dioxide concentration for any 24-hour period at any location shall not exceed 230 micrograms per cubic meter, except once per year.

C. The annual arithmetic mean of the 24 hour average sulfur dioxide concentrations at any location shall not exceed 57 micrograms per cubic meter.

4. Carbon Monoxide Ambient Air Quality Standards

A. The maximum carbon monoxide concentration for any 8 hour period at any location shall be 10 milligrams per cubic meter, which standard may be exceeded once per year.

B. The maximum carbon monoxide concentration for any 1 hour period at any location shall be 40 milligrams per cubic meter, which standard may be exceeded once per year.

5. Photochemical Oxidant Ambient Air Quality Standard

A. The maximum photochemical oxidant concentration for any 1 hour period at any location shall be 160 micrograms per cubic meter, which standard may be exceeded once per year.

6. Hydrocarbon Ambient Air Quality Standard

A. The maximum hydrocarbon concentration for any 3 hour period at any location shall be 160 micrograms per cubic meter, which standard may be exceeded once per year.

7. Nitrogen Dioxide Ambient Air Quality Standard

A. The annual arithmetic mean of the 24 hour average nitrogen dioxide concentration at any location shall not exceed 100 micrograms per cubic meter.

8. Lead Ambient Air Quality Standard

A. The maximum 24-hour lead concentration at any location shall not exceed 1.5 micrograms per cubic meter except once per year.

9. **Reserved**

10. Establishment of Ambient Increments

A. In addition to the ambient air quality standards adopted by the Board and enacted as 38 M.R.S.A., 584-A, any Class I Region or part thereof within the State (including those federal lands designated by the Clean Air Act Amendments of 1977) shall be subject to a maximum allowable increase in concentration of sulfur dioxide, total suspended particulate and Nitrogen Dioxide over the baseline concentration of such pollutants. The maximum allowable increase for any period other than an annual period, shall not be exceeded more than once annually. Such maximum allowable increase shall consist of:

1. Total Suspended Particulate.

a. An increase in the annual geometric mean at any location shall not exceed 5 micrograms per cubic meter.

b. An increase in concentration for any 24-hour period at any location shall not exceed 10 micrograms per cubic meter.

2. Sulfur Dioxide

a. An increase in the annual arithmetic mean at any location shall not exceed 2 micrograms per cubic meter.

b. An increase in concentration for any 24-hour period at any location shall not exceed 5 micrograms per cubic meter.

c. An increase in concentration for any three-hour period at any location shall not exceed 25 micrograms per cubic meter.

3. Nitrogen Dioxide

a. An increase in the annual arithmetic mean at any location shall not exceed 2.5 micrograms per cubic meter.

B. In addition to the ambient air quality standards adopted by the Board and enacted as 38 M.R.S.A., 584-A, any Class II region or part thereof within the State shall be subject

to a maximum allowable increase in concentration of total suspended particulate, sulfur dioxide and nitrogen dioxide over the baseline concentration of such pollutants. The maximum allowable increase for any period other than an annual period, shall not be exceeded more than once annually. Such maximum allowable increase shall consist of:

1. Total Suspended Particulate

    a. An increase in the annual geometric mean at any location shall not exceed 19 micrograms per cubic meter.

    b. An increase in concentration for any 24-hour period at any location shall not exceed 37 micrograms per cubic meter.

2. Sulfur dioxide

    a. An increase in the annual arithmetic mean at any location shall not exceed 20 micrograms per cubic meter.

    b. An increase in concentration for any 24-hour period at any location shall not exceed 91 micrograms per cubic meter.

    c. An increase in concentration for any three-hour period at any location shall not exceed 512 micrograms per cubic meter.

3. Nitrogen Dioxide

    a. An increase in the annual arithmetic mean at any location shall not exceed 25 micrograms per cubic meter.

C. In addition to the ambient air quality standards adopted by the Board and enacted as 38 M.R.S.A., 584-A, any Class III Region or part thereof within the State shall be subject to a maximum allowable increases in concentration of total suspended particulate, sulfur dioxide and nitrogen dioxide over the baseline concentration of such pollutants. The maximum allowable increase for any period other than an annual period, shall not be exceeded more than once annually. Such maximum allowable increase shall consist of:

1. Total Suspended Particulate

    a. An increase in the annual geometric mean at any location shall not exceed 37 micrograms per cubic meter.

    b. An increase in concentration for any 24-hour period at any location shall not exceed 75 micrograms per cubic meter.

2. Sulfur dioxide

a. An increase in the annual arithmetic mean at any location shall not exceed 40 micrograms per cubic meter.

b. An increase in concentration for any 24-hour period at any location shall not exceed 182 micrograms per cubic meter.

c. An increase in concentration for any three-hour period at any location shall not exceed 700 micrograms per cubic meter.

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11. Exclusions From The Increment

A. Concentrations of such pollutant attributable to the increase in emissions from stationary sources which have converted from the use of petroleum products, or natural gas, or both, by reason of an order which is in effect under the provisions of sections 2 (a) and (b) of the Federal Energy Supply and Environmental Coordination Act of 1974 over the emissions from such sources before the effective date of such order;

B. Concentrations of total suspended particulate attributable to the increase in emissions from construction or other temporary emission-related activities; and

C. The increase in concentrations attributable to new sources outside the United States over the concentrations attributable to existing sources which are included in the baseline concentration.

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These regulations shall be effective upon filing with the Office of the Secretary of State and shall supersede all previous regulations on this subject.

After public hearing on June 16, 17, 18, 19, and 20, 1980, the above regulation is adopted this 23rd day of July 1980.

After public hearing on August 3, 4, 10, 11, 1982 the above section was adopted November 23, 1982.

After public notice of May 18, 1988 and public record through June 17, 1988 the above regulation is adopted this 13th day of July 1988.

After public notice on August 2, 1989, public comment period through September 1, 1989 and an opportunity for public hearing, the above regulation is amended this 27th day of September 1989.

**BASIS STATEMENT :** This regulation reflects those ambient air quality standards that the Board has determined are necessary to control air pollution. The Board examined the existing quality of the ambient air, the uses of land, the effectiveness of control and the federal standard for the same pollutant. These standards are set to preserve and enhance Maine`s air quality.

**BASIS STATEMENT FOR AMENDMENT OF JULY 23, 1980 :** Studies have demonstrated that exposure to lead adversely affects human health. Lead is a listed critria pollutant for which EPA recently promulgated an ambient air quality standard. The Board concluded that a stricter standard was necessary in order to provide an adequate margin of safety to protect public health.

**BASIS STATEMENT FOR AMENDMENT OF NOVEMBER 23, l982 :** This regulation reflects those ambient air quality standards that the Board has determined are necessary to control air pollution. The Board examined the existing quality of the ambient air, the uses of land, the effectiveness of control and the federal standard for the same pollutant. These standards are set to preserve and enhance Maine`s air quality. Section l2 was adopted to establish an ambient air quality standard for hexavalent chromium which was found to be a human respiratory carcinogen.

**BASIS STATEMENT FOR AMENDMENT OF JULY 13, 1988 :** The particulate matter ambient air quality standards have been revised to add a standard for particulate matter, designated $PM_{10}$. A similar $PM_{10}$ standard has been adopted by the United States Environmental Protection Agency. $PM_{10}$ measures only that particulate matter less than 10 microns in diameter, which are the particles which can reach the lungs and result in serious health problems. The larger particles are primarily screened out by the nasal passages and the larynx. The existing Total Suspended Particulates (TSP) standard measures, in addition to the particles measured by the $PM_{10}$ standard, larger particles which EPA has determined do not pose significant health risks. After extensive study, EPA determined that $PM_{10}$ is a more appropriate measure of particulates in protecting human health than the existing TSP measure. Further, EPA did not find that there was sufficient scientific evidence to support retention of the TSP standard by EPA once a $PM_{10}$ standard was adopted by EPA. Because the Board does not have the authority to eliminate the TSP standard , the TSP ambient air standard will remain in the regulations until the Legislature has had an opportunity to modify or repeal the TSP standard.

**BASIS STATEMENT FOR AMENDMENT OF SEPTEMBER 27, 1989 :** This regulation has been amended to incorporate changes made by the 114th First Regular Session of the Maine

Legislature. The language for the $PM_{10}$ standards has been changed for consistency with the national standards, and an annual $PM_{10}$ standard more stringent than the federal standard has been adopted. Furthermore, the Total Suspended Particulate standards have been eliminated. No comments on the proposed changes were received by the Department.

AUTHORITY: 38 M.R.S.A., Section 584

EFFECTIVE DATE: October 22, 1971
Amended: May 7, 1979
Amended: October 14, 1980
Amended: January 24, l983
Amended: August 9, 1988
Amended: October 25, 1989